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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/603,227

06/25/2003

John Bossert Brown

17936

5568

7590

09/20/2004

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EXAMINER

HAMMOND, BRIGGITTE R

ART UNIT

PAPER NUMBER

2833

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/603,227	Applicant(s) BROWN ET AL.	
	Examiner Brigitte R. Hammond	Art Unit 2833	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-13, 15 and 17-20 is/are rejected.
- 7) ☒ Claim(s) 5, 14 and 16 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/25/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

Claims 6, 7 and 19 are objected to because of the following informalities:
regarding claims 6 and 7, it is unclear to the Examiner if "a base beam" in line 2 is the same base beam of claim 1. For examination purposes the Examiner shall assume "a portion of the base beam"; regarding claim 19, in line 5, after the first occurrence of "said base," insert - - after assembly- -, because it is unclear to the Examiner how the base holds the contact before assembly. **Appropriate correction is required.**

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,4, 6-10 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Pfaff 6,016,254. Pfaff discloses in fig. 5, a socket connector having a socket base 14 having a slot 44 oriented at a first angle (see attachment) with respect to a bottom surface of said socket base; and a contact 18f having a base beam 26F and a retention portion (lower 56F), said retention portion forming an initial angle (see attachment) with said base beam before said contact is assembled (see first slot on right hand side of fig. 5) with said socket base that differs from said first angle, said socket base receiving said contact 18f with said retention portion held in said slot such

that an angle between said base beam and said retention portion is changed from said initial angle.

Regarding claim 2, the retention portion includes barbs that engage the slot.

Regarding claim 4, the retention portion is narrower than said base beam such that said base beam is flexibly formed at one end with said retention portion.

Regarding claim 6, a portion 28f of the base beam for each of said contacts abuts against said bottom surface of said socket base to maintain said base beams coplanar with one another in a contact seating plane.

Regarding claim 7, a portion 28f of the base beam for each of said contacts carries a solder ball 30, said base beams abutting against the bottom surface of the socket base to maintain said solder balls coplanar with one another.

Regarding claim 8, said base beam includes a flexible arm 28f extending downward therefrom, said flexible arm being configured to receive a solder ball.

Regarding claim 9, said base beam and retention portion form said initial angle with one another when said contact is in a relaxed, unbiased condition (see first slot on right hand side of fig. 5).

Regarding claim 10, when said contact of Pfaff is mounted to said socket base, said angle between said retention portion and base beam increases (see last slot on left hand side of fig. 5).

Regarding claim 18, Pfaff discloses a socket connector, comprising: a base 14 carrying a contact 18f, said contact including a contact arm 24f extending beyond a top surface of said base, said contact including a base beam 26f extending along a bottom

surface of said base (at 28f), said base beam being configured to carry a solder ball (at 28f); and a socket cover 12 releasably connected to said base proximate said top surface and covering said contact arm, said socket cover having a rigid top surface that contains a heat transfer aperture (col. 3, lines 60-66) configured to permit heat to transfer to said contact. In regard to claim 18, it has been held that the recitation that an element is "configured to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. In re Hutchison, 69 USPQ 138.

Regarding claim 19, the base of Pfaff includes a channel (area near 60f) and a slot 44 proximate each other, said slot being oriented at a first angle (see attachment) with said bottom surface of said base, said contact having a retention portion 56f that forms an initial angle (see attachment) with said base beam that differs from said first angle before said contact is assembled with said base, said base holding said contact such that said base beam is biased by said bottom surface of said base to change an angle between said base beam and retention portion.

Regarding claim 20, the base of Pfaff includes a slot 44, said contact 18f having a retention portion that is formed with said base beam, said retention portion having retention barbs extending from sides thereof said retention portion extending through said slot such that said retention barbs engage said base to retain said contact within said base.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pfaff 6,016,254. Pfaff discloses the invention substantially as claimed. Pfaff discloses a socket cover 12, releasably connected to said base and covering said contact, said socket cover having a rigid top surface that contains an aperture to permit heat transfer to said contact. Pfaff does not disclose "apertures". However, adding another aperture would have been an obvious duplication of Pfaff's aperture, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St Regis Paper Co. V. Bemis Co.*, 193 USPQ 8. One skilled in the art would be motivated to increase the number of apertures of Pfaff to increase the surface area of the cover for the associated heat sink.

Claims 11-13,15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfaff in view of Applicant's Admitted Prior Art (AAPA) as disclosed on pages 2-3 of the instant application. Regarding claim 11, Pfaff discloses in fig. 5, a socket connector having an insulated base 14 having a co-efficient of thermal expansion, a metal contact 18f having a co-efficient of thermal expansion, said contact including a retention portion (lower 56F) formed at one end of said contact and a contact arm 24f formed at an opposite end of said contact, said retention portion being secured to said base to permit "relative" movement between said contact and base

during temperature changes. Pfaff discloses the invention substantially as claimed. Pfaff does not disclose the co-efficients of thermal expansion being first and second co-efficients. However, AAPA discloses on page 2 paragraph 6, that the base and contact having different co-efficients of thermal expansion is well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the base and contact of Pfaff's invention with different co-efficients of thermal expansion to minimize the probability of complications with the fit and associated tolerances between the slot 44 the retention portion 56F, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious engineering choice. In re Leshin, 125 USPQ 416 (CCPA 1960). Also regarding to claim 11, it has been held that the recitation that an element is "permitted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. In re Hutchison, 69 USPQ 138.

Regarding claim 12, the base of Pfaff includes a slot 44, that is oriented at a first angle with a bottom surface of said base 14, said contact 18f including a base beam 26f formed with said retention portion at an initial angle that differs from said first angle, said base 14 carrying said contact with said retention portion held in said slot such that said base beam is biased away from said retention portion by said bottom surface of said base (see last slot on left hand side of fig. 5).

Regarding claim 13, Pfaff discloses a socket cover 12, releasably connected to said base and covering said contact, said socket cover having a rigid top surface that

contains an aperture to permit heat transfer to said contact. Pfaff does not disclose "apertures". However, adding another aperture would have been an obvious duplication of Pfaff's aperture, since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. *St Regis Paper Co. V. Bemis Co.*, 193 USPQ 8. One skilled in the art would be motivated to increase the number of apertures of Pfaff to increase the surface area of the cover for the associated heat sink.

Regarding claim 15, said contact arm 24f is configured to engage a processor and said contact carries a solder ball 30 that is configured to engage a circuit board, said retention portion being remotely located from said contact arm 24f and said solder ball to afford said contact arm and solder ball a limited range of motion when said retention portion is retained within said base. Also regarding to claim 15, it has been held that the recitation that an element is "configured to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Regarding claim 17, Pfaff discloses the contact including an arm 28f extending downward from said contact to receive a solder ball that is configured to be soldered to a circuit board, said arm permitting "relative" motion between said contact and a circuit board during soldering.

Allowable Subject Matter

Claims 5,14 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: regarding claim 5, patentability resides, at least in part, in the contact having a support portion abutting against an end wall of a channel proximate a slot in the base, in combination with the other limitations of the base claim; regarding claim 14, patentability resides, at least in part, in the contact having a base beam that is flexibly joined to the retention portion such that, when the contact expands or contracts due to temperature changes, the base beam flexes with respect to the retention portion, in combination with the other limitations of the base claim; regarding claim 16, patentability resides, at least in part, in the contact having a base beam moving relative to the base during temperature changes, in combination with the other limitations of the base claim.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pfaff 5,419,710, Howell et al. 6,652,329, Yamagishi 6,083,013 and Pickels et al. 6,454,588 were cited for similar sockets.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brigitte R. Hammond whose telephone number is 571-272-2006. The examiner can normally be reached on Mon.-Thurs. and Alternate Fridays from 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A Bradley can be reached on 571-272-2800 ext. 33. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



September 15, 2004

Brigitte R. Hammond
Examiner
Art Unit 2833